

Amendments to the claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of claims:

1. (Currently amended) A detoxified and immunologically active heat-labile enterotoxin protein having ~~an amino acid sequence of heat-labile enterotoxin of *E. coli* of *Escherichia coli*~~, wherein serine residue at position 63 is substituted with tyrosine or amino acid residues at positions 110 and 112 are ~~mutated in a site-directed manner~~ deleted.
2. (Currently amended) A detoxified and immunologically active heat-labile enterotoxin protein having an amino acid sequence of ~~heat-labile enterotoxin of *E. coli*~~ (SEQ ID NO:3), in which ~~serine residue at position 63 is substituted with tyrosine~~ SEQ ID NO:3.
3. (Withdrawn-Currently amended) A DNA sequence (~~SEQ ID NO:4~~) encoding the detoxified and immunologically active heat-labile enterotoxin protein of ~~claim 2~~ claim 1.
4. (Withdrawn-Currently amended) A recombinant expression vector ~~pBlueKS-/LTS63Y~~ which comprises the DNA of claim 3.
5. (Withdrawn-Currently amended) *Escherichia coli* ~~Top10F'~~ pBlueKS-/LTS63Y (~~KCTC 0648BP~~) transformed with the recombinant expression vector ~~pBlueKS-/LTS63Y~~ of claim 4.
6. (Currently amended) A detoxified and immunologically active heat-labile enterotoxin protein having an amino acid sequence of ~~heat-labile enterotoxin of *E. coli*~~ (SEQ ID NO:5, in which ~~glutamic acid residues at positions 110 and 112 are deleted~~) SEQ ID NO:5.

7. (Withdrawn-Currently amended) A DNA ~~sequence (SEQ ID NO:6)~~ encoding the detoxified and immunologically active heat-labile enterotoxin protein of claim 6.

8. (Withdrawn-Currently amended) A recombinant expression vector ~~pBlueKS-/LT4110/112~~ which comprises the DNA of claim 7.

9. (Withdrawn-Currently amended) *Escherichia coli* ~~Top10F'-pBlueKS-/LT4110/112 (KCTC 0649BP)~~ transformed with the recombinant expression vector ~~pBlueKS-/LT4110/112~~ of claim 8.

10. (Withdrawn-Currently amended) A method for preparing the detoxified and immunologically active heat-labile enterotoxin protein of claim 1 which comprises the steps of culturing a culture of recombinant microorganism transformed with an expression vector comprising a DNA encoding the protein and isolating the protein from the culture.

11. (Withdrawn-Currently amended) The method according to claim 10, wherein the recombinant microorganism is *Escherichia coli* Top10F'-pBlueKS-/LTS63Y deposited under accession number of (KCTC 0648BP) or *Escherichia coli* Top10F'-pBlueKS-/LT4110/112 deposited under accession number of (KCTC 0649BP).

12. (Cancel)

13. (Currently amended) A mucosal adjuvant comprising an active ingredient of the detoxified and immunologically active heat-labile enterotoxin protein of claim 1.

14. (Currently amended) The detoxified and immunologically active heat-labile enterotoxin protein of claim 1, wherein serine residue at position 63 is substituted with tyrosine.

15. (Withdrawn-Currently amended) A nucleic acid encoding the detoxified and immunologically active heat-labile enterotoxin protein of claim 14.

16. (Withdrawn) A vector comprising the nucleic acid of claim 15.

17. (Withdrawn) A host cell transformed with the vector of claim 16.

18. (Currently amended) The detoxified and immunologically active heat-labile enterotoxin protein of claim 1, wherein glutamic acid residues at positions 110 and 112 are deleted.

19. (Withdrawn) A nucleic acid encoding the protein of claim 18.

20. (Withdrawn) A vector comprising the nucleic acid of claim 19.